[CASE SERIES]

Differentiating Central Centrifugal Cicatricial Alopecia and Androgenetic Alopecia in African American Men

Report of Three Cases

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ABSTRACT

Central centrifugal cicatricial alopecia is a scarring alopecia that is predominantly seen in African American women, but occurs less frequently in men. The authors present three cases of African American men with biopsy-proven central centrifugal cicatricial alopecia and detail the clinical presentation, histological findings, and treatment regimens. Central centrifugal cicatricial alopecia should be considered in the differential diagnosis when evaluating male patients with vertex hair loss accompanied by scalp symptoms. Physicians should maintain a high index of suspicion in African American men with the appropriate clinical picture and confirm the diagnosis by scalp biopsy. Prompt and appropriate treatment can help halt or slow disease progression. (*J Clin Aesthet Dermatol.* 2012;5(6):37–40.)

Central centrifugal cicatricial alopecia (CCCA) is a scarring alopecia that is predominantly seen in African American women, but occasionally occurs in men. To the authors' knowledge, there are nine reported cases.[1,2] Herein, they report three additional cases to illustrate how the differential diagnosis for vertex hair loss in men of African descent should include androgenetic alopecia (AGA) and although uncommon, CCCA.

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Case 1. A 27-year-old African American man presented with thinning hair on the vertex and pruritus for 1.5 years. Grooming practices included a dreadlocks hairstyle, which he wore for three years. He had no history of chemical hair straighteners or heat styling and no previous scalp disorders or family history of hair loss. His exam showed symmetrical hair loss on the vertex and scaling. Biopsy findings were typical for CCCA—reduced numbers of follicles with many replaced by connective tissue (Figure 1); premature desquamation of the inner root sheath (Figure 2); and perifollicular chronic inflammation and concentric, lamellar fibroplasia involving the upper isthmus (Figure 3) and lower infundibulum (Figure 4). Given the patient's symptoms, exam findings, and biopsy results, a confirmatory diagnosis of CCCA was made. Treatment included 0.05% clobetasol propionate foam nightly and 1% ciclopirox shampoo weekly. The patient responded to treatment with disease stabilization and some hair regrowth within eight months of starting treatment (Figures 5A and 5B).

Case 2. A 20-year-old man presented with pruritus, vertex hair loss, and thinning for a few months' duration that was first noticed by the patient's barber. The patient had no history of chemical or heat styling or scalp disorders, and his family history was only significant for hair loss in his father. The patient's hairstyle at presentation was an "afro," but the remainder of the exam findings was similar to Case 1. Biopsy confirmed CCCA and treatment was also similar to Case 1, but with the addition of minoxidil 5% twice daily. The patient reported no noticeable hair regrowth after two months of treatment.

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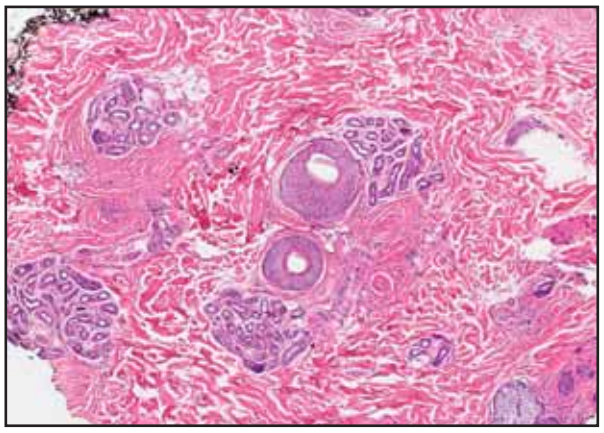


Figure 1. Scanning magnification of CCCA in a man. Note the marked decrease in the total number of hairs, the collagenous zones (follicular scars) devoid of follicles, and the loss of sebaceous glands.

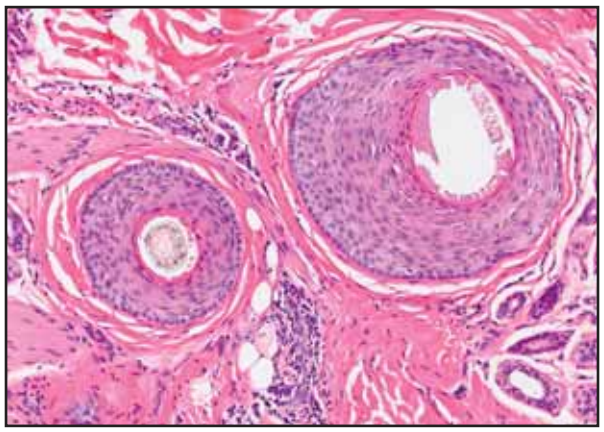


Figure 2. The follicle on the left shows total loss of the inner root sheath at the level of the lower border of the isthmus, indicating premature desquamation. A normal follicle (on right side) with an intact inner root sheath is present for comparison.

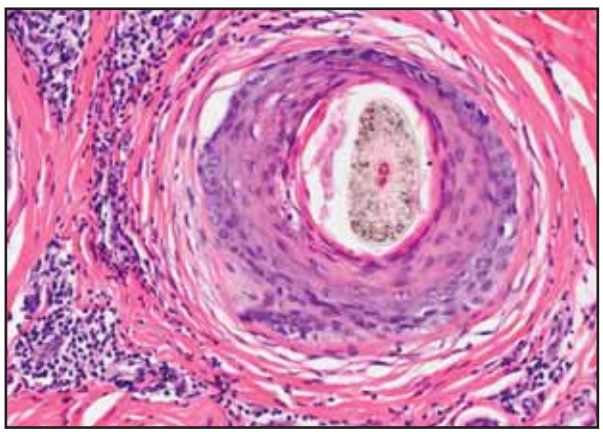


Figure 3. Early changes of CCCA can be seen in this follicle, sectioned at the level of the upper isthmus. There is mild concentric, lamellar fibroplasia and a moderate degree of perifollicular, chronic inflammation.

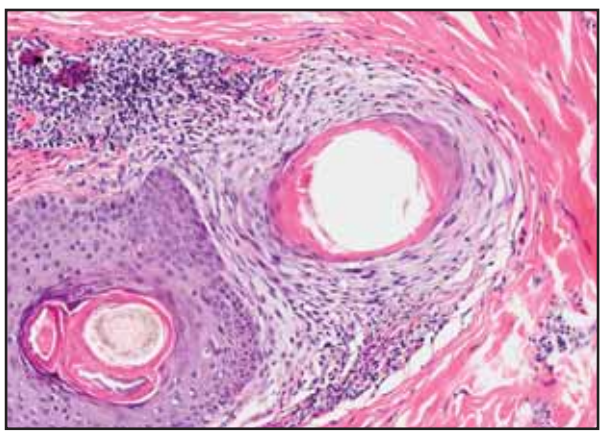
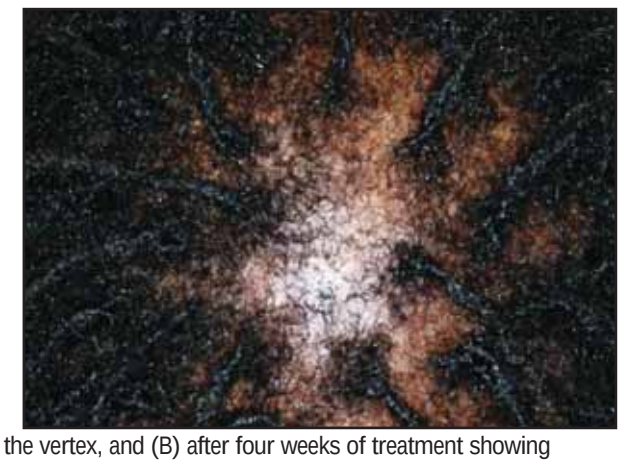


Figure 4. More advanced changes of CCCA can be seen in this follicle, sectioned at the level of the lower infundibulum. There is marked epithelial atrophy and a severe degree of concentric, lamellar fibroplasia and perifollicular, chronic inflammation.



Figures 5A and 5B. (A) Case 1 at initial presentation showing hair loss at the vertex, and (B) after four weeks of treatment showing regrowth particularly at the periphery of hair loss.

TABLE 1. Comparison of clinical features and treatments for central centrifugal cicatricial alopecia versus androgenetic alopecia

	CENTRAL CENTRIFUGAL CICATRICIAL ALOPECIA	ANDROGENETIC ALOPECIA
Type of alopecia	Scarring alopecia	Non-scarring alopecia
Location of hair loss	Vertex	Vertex, crown, frontal, bi-temporal
Progression	Symmetrical, radial	Diffuse
Inflammation present	Yes	No
Symptoms	Pustules, papules, scaling, tenderness, pruritus	Asymptomatic
Physical exam	Short, fragile, brittle hair remaining in affected area; shiny or smooth scalp; erythema	Miniaturization (finer, shorter hairs remaining in affected areas)
Treatment	Topical or intralesional corticos-teroids, antifungal shampoo, antibiotics	2% or 5% minoxidil, finasteride 1mg, hair restoration

Case 3. A 44-year-old man presented in a similar fashion as Case 1, with scale and hair loss on the vertex. In the past, the patient had used chemical texturizers, which soften the curl pattern. At presentation, the patient wore an afro hairstyle. Biopsy confirmed CCCA and treatment was also identical to Case 1.

DISCUSSION

Primary cicatricial alopecias (CA) are commonly classified according to the type of inflammatory infiltrate present. CAs can be predominately lymphocytic, such as with CCCA, neutrophilic, or mixed.[3] Folliculitis keloidalis shows mixed lymphocytic and neutrophilic infiltration with histological findings similar to CCCA.[3] Interestingly, folliculitis keloidalis and CCCA occur concurrently in some patients, but further study is needed to determine the significance of this relationship.[1] Histologically, AGA demonstrates miniaturization of terminal hairs into vellus-like hairs and an absence of inflammation.[4]

The clinical presentation, histopathology, and treatment response appear to be similar between men and women with CCCA. Therefore, current practices to diagnose and treat female patients should also be used for male patients with CCCA.[1] Timely management of CCCA can halt or slow disease progression in most cases, but hair regrowth depends on the extent of damage and scarring in the follicle.[5]

Clinical features of CCCA and AGA are presented in Table 1. African American men presenting with hair loss on the vertex and concurrent symptoms of pruritus, scaling, erythema, pustules, papules, or tenderness warrant evaluation for CCCA with biopsy confirmation. AGA can affect the vertex, but is usually asymptomatic, with additional hair loss in the frontal or bitemporal hairline or crown (Figure 6).[5] On average, CCCA in men presents at an earlier age than AGA. In the study by Sperling et al,[1] the average age was 29 years; the average age in the current study was 30 years. However, more cases are needed to confirm this observation.

Currently, there are no published studies that establish an effective treatment regimen for CCCA. It is typically treated more aggressively than AGA with anti-inflammatory agents, such as potent topical corticosteroids, applied daily to the scalp[6] and/or intralesional corticosteroids at the periphery of the affected area monthly for the first six months, then symptomatically thereafter.[5] Aggressive cases may require a minimum of six months of treatment with oral tetracycline

Figure 6. Androgenetic alopecia on the vertex. Note the symmetrical hair loss similar to CCCA.

or doxycycline due to their anti-inflammatory properties.[6] Much longer treatment periods may be required. Antifungal shampoos can be used to control scaling and inflammation.[5] However, severely damaged follicles may not recover, and follicular scars are incapable of hair regrowth.[6] AGA is commonly treated with 2% or 5% minoxidil or finasteride 1mg, which typically results in increased hair density.[4] Hair transplantation for AGA can produce dramatically positive results, but will be unsuccessful in patients with active inflammation from CCCA.[5]

The cause of CCCA remains unknown, but hair grooming practices, such as chemical processing with relaxers; heat styling; and hairstyles that increase traction, such as braids and extensions,[6] have been implicated, particularly in women. Genetic inheritance factors have also been suggested, which may be a more likely explanation in men because they less commonly use the above hair grooming practices. However, there is no published literature that definitively establishes the cause(s).[5] Therefore, it is important to obtain a thorough medical history including hair grooming practices and scalp biopsy when clinical suspicion necessitates further investigation.

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